Summary

The combination of nasal polyposis, thick tenacious mucin, crust formation and sinus cultures yielding “Aspergillus” was first noted by *Safirstein, 1976,* who observed the clinical similarity that this constellation of findings shared with allergic bronchopulmonary Aspergillosis. Reports that followed further supported the existence of this clinical entity, and gave rise to descriptive nomenclature such as “allergic Aspergillosis of the Paranasal sinuses”,“allergic fungal rhino sinusitis”, and most recently “eosinophilic fungal rhino sinusitis”.

Typical patients with allergic fungal rhino sinusitis are immune competent young adults with recurrent chronic sinusitis, massive nasal polyposis, and thick tenacious mucin in the nose and sinuses. They may have history of multiple sinonasal surgical procedures or history of documented atopic disease, peripheral eosinophilia and elevated total IgE level.

Most authors agree that AFS is an underdiagnosed entity and that only an increased awareness among physicians to look for fungal involvement will increase the accuracy of diagnosing AFS. Unfortunately, previous diagnostic methods seem to lack sensitivity. For example, in the past, even when fungal hyphae were clearly identified in histologic specimens, only 60% of the cultures were positive for fungi.

The aim of this work was to define the true incidence of fungal elements in the nasal and sinus mucin in cases of chronic rhino sinusitis (CRS) with bilateral polyposis compared with normal controls via mycologic and histologic identification of the various fungal species colonizing the viscid allergic mucin.

100 Patients with the clinical diagnosis of chronic rhinosinusitis (CRS) with massive or recurrent bilateral nasal Polyposis were investigated in this study and compared to 50 Volunteers with no history of nasal or paranasal sinus disease, with no symptoms of inhalant allergy, and with normal appearing mucosa.

Awareness that fungi are colonizing the mucus prompted development of a simple noninvasive procedure to obtain as much mucus as possible for cultures in the same manner the principle of maximum mucus preservation was adhered to during the acquisition of surgical specimens for the histopathological examination and a new immunofluoresent stain (Fungalase) was used in identification of fungi.

We have confirmed the presence of allergic mucin in (92%) of our patients having CRS with polyposis.In the same study we have found fungal organisms in 100 **(**100**%)** of 100 consecutive patients, and the preoperative CT scan examination have demonstrated features of AFS (hyper attenuation foci, polyposis, bony expansion or erosion) in **(100%)** of our patients. Our data show that the postulated criteria for the diagnosis of AFS were present in 97% of CRS with polyposis, suggesting that fungi are involved in the disease process of every CRS patient.

This study has verified that there is geographical variation with regard to the predominantly cultured fungi in AFS patients, where the Aspergillus species were the significantly predominant organisms among both patients and controls. This is at variance with the experience from North America and Europe, where the dematiaccous fungi particularly the Alternaria species were more prevalent.